

Appl. No. 09/816,510  
Reply to Office action of 03/25/2004

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### REMARKS/ARGUMENTS

In reply to the Office Action mailed March 25, 2004, Applicants respectfully request reconsideration and allowance of all the claims in the subject application. In the Office Action, the Examiner issued a restriction requirement, to which Applicants have made a provisional election, and rejected all the provisionally elected claims 12-20 in the subject application. In reply, Applicants traverse the restriction requirement and the rejection of the claims. Claims 1-20 remain pending in the subject application.

The Examiner issued a restriction requirement between claims 1-11 of Group I, drawn to an FCC apparatus, and claims 12-20 of Group II, drawn to a process for fluidized catalytic cracking of hydrocarbons. The Examiner contends that "the apparatus as claimed can be used to practice another process in which no relationship between the circulation rates is determined or controlled to a preset condition." Detailed Action at 2. However, claims 1-11 all recite instrumentation for determining the circulation rate of spent catalyst through the recycled catalyst conduit and instrumentation for determining the circulation rate of regenerated catalyst through a regenerated catalyst conduit. Moreover, claims 1-11 recite a controller for setting a position of the recycled catalyst control valve dependent on a relationship between the circulation rate of spent catalyst and the circulation rate of regenerated catalyst. Therefore, Applicants respectfully submit that for the restriction to be appropriate, the apparatuses of claims 1-11 would have to be used while some of the claimed features are inoperative. Applicants respectfully submit that this is insufficient basis for a restriction requirement. Accordingly, Applicants respectfully request reconsideration and withdrawal of the restriction requirement.

The Examiner rejected claims 12-17 and 20 for anticipation under 35 U.S.C. §102(b) by U.S. Patent 3,888,762 (the "Gerhold patent"). The Examiner contends that the Gerhold patent discloses that a refiner can directly vary catalyst activity by controlling coke on catalyst and thereby control product yields by decreasing or increasing the amount of spent catalyst recycled to the riser. Detailed Action at 3. Then the Examiner makes the assumption that: "Clearly, the amount of each type of catalyst passed to the riser must be measured and there would necessarily be a ratio of the two catalysts. Therefore, the examiner asserts that the Gerhold referenced discloses that the circulation rates of each type of catalyst are measured." Detailed Action at 3-4.

Applicants respectfully submit that the Examiner's assumption is not accurate. No teaching in the Gerhold patent indicates that the circulation rates of catalyst are measured. Nor does the Gerhold patent disclose any equipment for measuring the circulation rate of catalyst in these conduits. Applicants respectfully submit that the Gerhold patent contemplates controlling the slide valves 17 and 24 on standpipes 10 and 9, respectively, based on indications other than the actual catalyst circulation rate therethrough, such as composition of the product or low feed temperature, etc. However, no teaching in the Gerhold patent indicates that circulation rates of catalyst are in any way measured which is not an easy task to perform because the circulation rate being measured is of one phase in a two-phase flow of solid and gas. The subject application discloses a non-limiting way of

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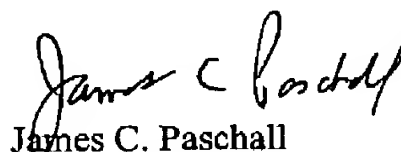
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measuring catalyst circulation rate by taking a density indication upstream of the slide valve by factoring readings from a pressure differential transmitter with connections placed at different heights along the conduit and then taking a pressure differential reading across the slide valve. E.g., ¶ 0032. The Gerhold patent discloses no such equivalent for doing this or even the need to do so.

Claims 12-20 recite determining circulation rates of spent and regenerated catalyst, and claims 1-11, if considered by the Examiner, recite instrumentation for determining the circulation rate of spent and regenerated catalyst through the respective catalyst conduits. Applicants respectfully submit that the cited references do not disclose all of the limitations in the claims under rejection.

Accordingly, Applicants respectfully request reconsideration and allowance of all the claims 1-20 in the subject application. Should the Examiner have any questions regarding this matter, please feel free to call the undersigned.

Respectfully submitted,



James C. Paschall  
Attorney for Applicants  
Reg. No. 36,887  
(847) 391-2355 (phone)  
(847) 391-2387 (fax)

James W. Hellwege  
Registration No. 28,808  
Washington Counsel (703) 205-8021  
JCP/gm